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ABSTRACT

Results of changes to the planning process at the University of Utrecht in the Netherlands are described. During the past years, government actions related to retrenchment prompted the Dutch universities to change their planning process in order to increase flexibility and to account for differences in quality. Two important procedures were carried out: restructuring of educational programs and an external review of research programs. The new structure of educational programs included a four-year degree program, selective admission to graduate programs, and a limitation on the period that students can attend college. Educational restructuring resulted in greater emphasis on general studies and a postponement of specialization; a modular organization of programs; more attention to measuring output (e.g., graduation rate) as well as qualitative issues; and changes in the resource allocation model. Results of the external review of research programs included: most of the departments were able to submit more research programs than was calculated; differences among departments were due to historical factors, such as the value attached to research activities and fluctuation in student enrollment; and research activities were grouped into broader programs. (SW)

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QUALITATIVE ISSUES OF PLANNING IN A DUTCH UNIVERSITY

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This paper was presented at the Twenty-Fifth Annual Forum of the Association for Institutional Research held at the Portland Hilton in Portland, Oregon, April 28-May 1, 1985. This paper was reviewed by the AIR Forum Publications Committee and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC Collection of Forum papers.

Elizabeth F. Fox, Chair
Forum Publications Editorial
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QUALITATIVE ISSUES OF PLANNING IN A DUTCH UNIVERSITY.

> For even as in the business of life a man's disposition and the secret workings of his mind and affections are better discovered when he is in trouble than at other times; so likewise the secrets of nature reveal themselves more readily under the vexations of art than when they go their own way.
>
> Francis Bacon,
>
> Novum Organon (1620).

Abstract

During the past years government measures related to retrenchment have urged the Dutch universities to change their planning process in order to increase flexibility and to account for differences in quality. Two important procedures carried out in this context are now in a final stage: an external review of research programs and the restructuring of educational programs. The results of these operations are analysed, with emphasis on their impact for program quality. The paper also discusses the consequences of these results for the planning process.

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1. Introduction

Since 1980 Dutch universities have been overwhelmed by a number of government measures related to retrenchment:

1. The universities were forced to restructure their curricula from the existing five to six years into a four-year curriculum; an important objective of this change was to increase the program output.
2. Staff/student ratios in the budgeting model of the Ministry of Education were seriously reduced, for some disciplines as much as 40%, which of course meant a normative reduction of the teaching load.
3. In a nation-wide process specific fields of study were concentrated in one or two universities. This concerned not only highly specialized curricula with very small enrollment, such as exotic languages, but also a number of larger ones; the University of Utrecht, for instance, had to give up dentistry, a program with about 600 students (1).
4. The Ministry of Education developed new budgeting procedures in order to allocate research funds to universities on the basis of the volume of submitted research programs of acclaimed and externally reviewed quality in five-year cycles.

These measures have forced the Dutch universities to restructure their planning process in order to take qualitative aspects into account and to increase flexibility (2). A number of procedures developed in this context are now in their final stages which allow a first evaluation.

This concerns in particular the new budgeting procedures for research programs on the basis of external reviews and the restructuring of educational programs (3).

The purpose of this paper is to investigate the way in which these two processes have already resulted or will result in qualitative changes in research and educational programs and to which extent these changes can be taken into account for the allocation of funds.

2. The new budgeting procedures for research programs

In the seventies the Dutch Ministry of Education used to divide the budget for higher education among the universities on the basis of the number of students. The internal allocation models of the universities too were enrollment driven: funds for educational programs as well as for research programs were allocated on the basis of the number of students. This structure of the allocation models was linked to the view that teaching and research were symbiotic counterparts, woven together into one strong fabric. For a long time it had been considered necessary for each faculty member to do research as well as teaching.

In 1980 demands for accountability (4) led the Ministry of Education to the development of new budgeting procedures. Among other things these new procedures introduced the allocation of a large part of the research funds to the universities on the basis of the quality of research programs, independently of the number of students. The Ministry calculated the research capacity of each university by

subtracting the teaching load and the faculty needed for approved public services from the total number of faculty of a university. Financing of this research volume would only be continued when the university was capable of submitting an equal volume of externally reviewed research programs of acclaimed quality. The budget for these programs would be guaranteed for 5 years, while the process should not lead to budget cuts at least until the end of 1984. The Ministry and the universities agreed upon the appointment of external review boards, most of which were existing committees with approved expertise in a specific field of research and, in some cases, the social aspects thereof. Conditions were set concerning the minimum size of the programs (5 fte), although protest against this condition finally led to a more flexible attitude.

In order to meet these requirements the University of Utrecht started a new budgeting procedure in 1981. This procedure contained three rounds. In the first round the University Board asked every department to account for high quality research programs to a maximum of one third of its calculated research capacity: these programs would be safeguarded against cutbacks within the university. The condition concerning the minimum size of programs forced the departments to look outside usual borders to make links with other research programs.

There were a number of reasons for the University Board to stipulate a maximum for this first round. Not only did this seem necessary in order to guarantee a careful start of this fairly new procedure and to prevent rash decisions; it also

stimulated discussions about priorities within the departments. The first round ended in 1982. It was agreed that the results would not immediately lead to a reallocation of funds.

The next year, in the second round, the departments had to submit programs of high quality for at least half of their calculated research capacity. Thus the discussion about priorities changed into a call for justification of the research capacity.

On the basis of the results of the first and second round, of the research capacity calculated , and of the actual research capacity according to the annual reports of the departments, a target was fixed for each department for the third and final round. In 1983 the indicated budgets for the next years were based on these targets. The third round would only lead to changes in these budgets, if a department were to fail its target.

The third round was completed in 1984.

The quantitative results of the three rounds are summarized in table I and II.

Table I shows for each department and for each of the three subsequent rounds the volume of research programs submitted for review and the volume of programs receiving favorable reviews, both expressed in full-time equivalents and the number of programs. Not included are Computer Sciences (started in 1983) and some small institutes.

Table II shows a comparison between the calculated research capacity for 1982, the actual research capacity according to the annual reports of 1981 and the results of the external reviews of submitted research programs.

Tabel I: Submitted and accepted programs in fte and number of programs

Department	after first round		after second round				after third round			
	submitted		submitted		accepted		submitted		accepted	
	fte	progr	fte	progr	fte	progr	fte	progr	fte	progr
Theology	3	4	6	5	6	5	16	7	15	6
Law	10	15	36	12	20	7	48	13	47	13
Arts	19	17	47	14	46	13	89	18	86	18
Philosophy	3	4	9	7	7	5	9	5	9	5
Mathematics			35	7	35	7	35	7	35	7
Physics/astronomy	19	11	52	11	52	11	72	12	72	12
Chemistry	26	11	57	9	26	6	79	13	69	12
Earth sciences	20	14	36	4	36	4	41	4	41	4
Biology	16	10	77	12	60	8	82	15	82	15
Pharmacy	5	4	19	2	16	1	22	3	22	2
Geography	4	4	22	5	17	4	27	6	26	6
Social sciences	26	19	68	20	53	17	110	30	100	30
Medicine	62	28	90	19	76	14	117	35	102	27
Dentistry	3	1	18	3	6	1	22	6	12	3
Veterinary sc.	14	11	68	13	55	11	82	16	79	16
Total	230	153	640	143	511	114	851	190	797	176

Tabel II: Research capacity and accepted programs.

Department	calculated research capacity 1982 fte	calculated research capacity 1982 %*	act. res. cap. 1981 fte	target fte	after 2nd round fte	after 3rd round fte	after 3rd round % of calc. res. cap.	after 3rd round % of act. res. cap.
Theology	15	44%	12	14	6	15	100%	125%
Law	40	28%	53	40	20	47	118%	89%
Arts	79	27%	108	79	46	86	109%	80%
Philosophy	7	33%	10	7	7	9	129%	90%
Mathematics	30	54%	29	29	35	35	117%	121%
Physics/astronomy	62	57%	67	62	52	72	116%	107%
Chemistry	95	73%	73	73	26	69	73%	95%
Earth sciences	54	63%	41	41	36	41	76%	100%
Biology	89	53%	77	77	60	82	92%	106%
Pharmacy	16	33%	28	16	16	22	138%	79%
Geography	27	36%	23	23	17	26	96%	113%
Social sciences	124	39%	109	109	53	100	81%	92%
Medicine	110	23%	161	110	76	102	93%	63%
Dentistry	41	33%	25	25	6	12	29%	48%
Veterinary sc.	37	13%	71	37	55	79	214%	111%
Total	826	38%	887	742	511	851	103%	96%

* percentage of the total number of faculty in fte.

act.res.cap. = actual research capacity

calc.res.cap. = calculated research capacity

3. Consequences of the new budgeting procedures for research programs

The procedures described above and the results as shown in the tables enable us to draw the following conclusions.

a. Submitted programs vs. calculated research capacity

The data in table II show that most of the departments were able to submit more research programs than the research capacity calculated. For the university as a whole this resulted in a larger number of programs than was needed from the point of budget-defense. An explanation for this can be found in the fact that the calculation of the teaching load also accounts for time spent with research activities closely connected to contributions to the educational programs. Clearly parts of these research activities are contained within high quality research programs.

Differences among departments with regard to the results are not related to disciplines. Table II also shows that there is no relation between research capacity (calculated or factual) and the success in submitting high quality research programs. The degree of success, however, bears a relation to the degree of divergence between the research capacity calculated and the actual one. This means that the differences among departments are due to historical factors, such as the value attached to research activities, recent fluctuations in student enrollment and the affinity of faculty for educational tasks.

b. Organisational consequences

The process has stimulated a grouping of individual research activities into broader programs.

The average size of a program can be seen in table I:

submitted in the first round : 230/153 = 1.50 fte;

accepted after the second round: 511/114 = 4.48 fte;

accepted after the third round : 797/176 = 4.53 fte.

This shows that while more fte of research programs were submitted, the average size of the programs became larger. Of course this expansion of successful programs is only partly caused by new research activities started in close connection with these programs. There has also been a grouping of individual activities under a common denominator. From a viewpoint of quality enhancement this process has to be welcomed, because the planning and evaluation (necessarily because of the limitation of the budget guarantee) can now take place in a broader context.

As a consequence we have observed that departments tend to change their organisational structure in order to strengthen the management of research programs. This will probably lead to the start of a number of research institutes, within as well as across departments.

c. Consequences for the planning process

The usefulness of the results of the process described as an input for the allocation model is limited.

We have seen that the sum of submitted programs for the university was more than was needed from the viewpoint of budget-defense. In other words the total sum of the programs exceeded the research capacity calculated and

consequently additional funds are required to finance these programs when they cannot be financed at the cost of other activities. But the same situation occurs at most of the other universities and the additional funds needed are not at the Ministry's disposal. Therefore it appears to be necessary for the universities and the departments to state priorities in order to translate the results into input data for the present allocation model. Up to this moment the submission of extra programs has not led to financial consequences.

An important disadvantage of the process was its time-consuming character. To make the external review possible for each program in each round a certain amount of information has to be submitted on forms. But not only these forms had to be filled out (and checked by the administration of departments, university and Ministry), they also had to be judged by the departmental councils and reviewed by the committees.

The total sum of all programs of all the universities in these three rounds amounted more than 4000 fte. The general feeling is that while the introduction of this procedure has certainly had positive effects, it can not serve as a blueprint for a continuous process. But, more importantly, one is becoming aware that a thorough evaluation will be necessary in order to check that the programs submitted are actually carried out in a satisfactory manner.

4. The restructuring of educational programs.

After twelve years of discussion and university opposition a law establishing new curricula types was passed in Parliament in 1980. This law forced the universities to restructure their curricula from the existing five or six years into a four year curriculum.

The purposes of this restructuring process can be summarized as follows:

1. to satisfy the changing needs of individuals as well as of society for university education;
2. to maintain or enhance the quality and efficiency of educational programs, including an increase of output;
3. to increase the flexibility of educational programs;
4. to bridge the gap between universities and other institutes of higher education.

Important features of the new structure of educational programs are:

1. a four year curriculum leading to an academic degree;
2. selective admission to graduate programs (5);
3. a limitation of the period during which students can be registered at universities.

The four year curriculum is divided into two parts. The intention of the first year ("propaedeutics") is to make the students familiar with the field of study in order to enable them to judge whether this field of study corresponds with their expectations and also to bring about a selection among the students. Every student which completes the first year with success, is supposed to be able to finish the entire curriculum successfully.

The program for the next three years ("doctoral phase") has to be constructed with flexibility and variety, with an eye towards the features desired from graduates, individual capacities and interests of students, changing needs of society and professional opportunities. For this purpose a so called "dossier diploma" was introduced. Such a diploma or certificate is the conclusion of an educational program in which a student has selected his own courses, according to his personal needs, without being confined to one department. Such a program, however, has to be approved by a department in order to guarantee the quality of the program.

It is expected that the restructured curricula will lead to increased output. Firstly, the length of the programs is reduced from five or six years to four years, which means a smaller chance for students to loose their motivation in the course of their study. Secondly, the programs are better attuned to the interests of students: the more freedom students get to select their own courses, the more students will graduate. Thirdly, a change of program does not necessarily prevent a student from taking along the credits for the courses he has already finished.

In September 1982 the first courses of the restructured programs were started.

5. Consequences of the restructuring of educational programs.

This chapter describes the most important consequences of the restructuring of educational programs at our university.

a. Organisational consequences.

The possibility for students to construct programs on an individual basis has stimulated departments to change the way in which they organize their programs. Programs used to be organized rather rigidly in one direction from the beginning to the end, with very limited possibilities to take courses outside the department.

In order to account for the increased flexibility programs now tend to evolve towards a more general set-up with postponement of the moment of specialization. In their first year students receive a general introduction in a rather wide field of study (for instance Social Sciences). As they advance the opportunity for specialization grows (for instance Art history of the Middle Ages, Social Psychology).

In order to enable students to choose their courses from any department a certain organisational conformity between the courses is necessary. Therefore a modular structure of all the programs is aimed at, notwithstanding the bridges to be gapped between the different departments.

b. More attention for output measurement and qualitative aspects.

One of the purposes of the restructuring process is, as we have seen, the increase of output of educational programs. In the Netherlands output is generally measured with the aid of graduation rates (6). Together with enrollment

predictions, these graduation rates form the basis for the calculation of the teaching load. The Ministry of Education has employed this method for several years, but used graduation rates that not only were outdated, but also averaged for all universities. To stimulate the increase of output these data are replaced by graduation rates based on recent data and differentiated for each university (7).

As a consequence the interest for output data has grown within the universities. For the present this interest concentrates on the results of the propaedeutical exams and their possible impact on graduation rates. The first results of the propedeutical exams actually justify the expectation that the average graduation rate of the programs before the restructuring process (55-60%) will increase to more than 65% for the new programs.

But this interest for output almost automatically stimulates a discussion about other qualitative aspects, for every system that stimulates the production of output carries in itself a certain danger for the quality of the output. This is one of the reasons that students and faculty in the University Council as well as several departmental councils show a growing interest in qualitative issues concerning educational programs. Therefore procedures are being developed for a systematic evaluation of educational programs.

c. Consequences for the allocation model

As we have seen the teaching load in most Dutch universities is calculated with the aid of graduation rates. There are a number of reasons why an allocation

model based on graduation rates can not meet the requirements of the new structure (8).

Firstly, to make graduation rates useful in a planning process it is necessary to make a prediction. But the calculation of a graduation rate can only be made after a number of years and the value of the prediction can be seriously questioned, when the circumstances change as fast as they have done in the past years.

Secondly, modular structures bring forward the need for an allocation model, in which output is not traditionally measured in terms of number of graduates but on a more refined level. Since not every student will take all his courses within one department the allocation model has to account for the teaching load concerning students from other departments. An allocation model can give a stimulus for the production of more output when it is based on output measurement. But a calculation of the teaching load based on the number of graduates will not be an incentive for departments to make their courses attractive for others than their own students.

An example of a more flexible system is a budgeting model under consideration in the University of Utrecht based on the number of credit-points earned by students in the previous year with courses within each department.

However, a certain reluctance to abandon the graduation rate as a basis for the allocation model can be observed. One of the reasons for this preference for the graduation rate probably is that one is inclined to think that a graduation rate gives an overall judgment of quality.

In the first place, however, it is questionable whether quality can be attributed to programs as a whole (let alone institutions as a whole) (9). But the danger of loss of quality is less too when the output is measured of smaller sets of courses or even of individual courses. The smaller the set of courses of which the output is considered, the sooner the data will be available, the easier it is to find other courses to compare with, and the easier it is to notice the occurrence of undesired side-effects. In other words a model based on the output of single courses has certain dangers, but also produces the data one needs to signalize whether undesired effects actually occur.

6. Summary and conclusion

As a consequence of retrenchment the University of Utrecht had to change its planning process in order to take qualitative aspects into account. This paper has described the first results of two procedures resulting from these changes.

The following conclusions can be drawn from an evalution of the external reviewing of research programs:

a. a grouping of individual research activities has taken place, which can be expected to lead to a way of organizing and managing research activities that is more apt for the activities involved;
b. the extent of high quality research programs of most of the departments was larger than was needed from the viewpoint of budget defense; differences among departments with

regards to the results were not related to disciplines, but to historical factors;

c. the quantitative results of the reviewing process can not be translated directly into input data for the present allocation model;

d. the time-consuming character of the procedure involved makes it impossible to use it year after year.

The restructuring process of educational programs has the following consequences:

a. programs tend to evolve to a more general set-up with postponement of the moment of specialization;

b. it has become necessary to organize the programs in a modular structure;

c. the special attention given to the expected increase of output stimulates discussions about qualitative aspects and the introduction of evaluation procedures;

d. it is necessary to change the allocation model in order to take the consequences of the process into account.

In general it can be concluded from the two procedures described that conditions have been created for quality enhancement of research and educational programs by introducing possibilities to respond to changing needs of society. However, after the rather time-consuming start, good and effective procedures for the evaluation of the programs are to be developed in order to observe the actual results and to preserve the improvement that has actually taken place.

Notes.

(1) For a description of this process, see Rosenberg (1983).

(2) A description of the problems caused by the government measures and the development of new planning procedures by the University of Utrecht can be found in Dijkman & Savenije (1983). The consequences for a department within this university are described in Verweel (1984).

(3) The term "educational program" in this paper is used in the sense of a series of courses leading to a degree or certification.

(4) A survey of different factors forcing higher education to be accountable for faculty members performance and to regulate more exactly the assigment of workload is given in Olswang & Lee (1984).

(5) In the years that have passed since 1980 the discussion about the purpose and the structure of graduate programs has passed several stages; it now appears to be in its final stage.

(6) A graduation rate is the percentage of a cohort of entering freshmen which receive a degree at some time.

(7) The start of this measure was somewhat delayed because of the difficulties in giving proper definitions for the concepts involved.

(8) A study of the relation between the stimulation and improvement of output and quality enhancement for Dutch universities can be found in Savenije (1984).

(9) See also: Fincher (1984), p. 9.

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